Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Establishing the Digital Opportunity Data Collection	)	WC Docket No. 19-195
	)	
	)	
Modernizing the FCC Form 477 Data Program	)	WC Docket No. 11-10

REPLY COMMENTS OF CTIA

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CTIA submits these reply comments in response to the Federal Communications Commission's ("Commission") *Second Further Notice of Proposed Rulemaking* seeking comment on incorporating mobile wireless voice and broadband coverage into the Digital Opportunity Data Collection ("DODC").[1]

I. INTRODUCTION AND SUMMARY.

The record makes clear that mobile wireless coverage data is essential to the Commission's public policy initiatives, including efforts to close the digital divide by identifying unserved areas for targeted support.[2] Given that mapping mobile broadband service is "complex," "probabilistic,"

[1] *In re Establishing the Digital Opportunity Data Collection*, Report and Order and Second Further Notice of Proposed Rulemaking, WC Docket Nos. 19-195, 11-10, FCC 19-79 (rel. Aug. 6, 2019) ("*Second FNPRM*").

[2] *See, e.g.*, Comments of Alaska Communications, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Alaska Communications Comments"); Comments of AT&T, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("AT&T Comments"); Comments of Competitive Carriers Association, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("CCA Comments"); Comments of Connected Nation, Inc., WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Connected Nation Comments"); Comments of Connected2Fiber, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Connected2Fiber Comments"); Comments of CTIA, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("CTIA Comments"); Comments of Deere & Company, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Deere Comments"); Comments of California Internet, L.P. DBA Geolinks, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Geolinks Comments"); Comments of GVNW Consulting, Inc., WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("GVNW Comments");

and multi-factored,[3] CTIA's comments support the bipartisan, bicameral congressional efforts led by Senator Wicker to require mobile wireless providers to submit standardized service-level propagation maps reflecting 4G LTE coverage.[4] There is broad support in the record for adopting these standards, which would provide the Commission with consistent coverage data and help identify unserved rural areas to target policies and support that will help to close the digital divide.

The record also confirms the value of conducting a pilot to evaluate the utility of other tools, such as crowdsourcing and drones, for verifying mobile broadband coverage. While CTIA appreciates the Commission's interest in validating provider-submitted coverage maps via these tools, a pilot program should be completed before the Commission requires use of these tools for validation of mobile wireless providers' coverage data or requires wireless providers to submit highly sensitive infrastructure information.

Finally, the Commission should maintain the DODC's clear focus on broadband availability to determine "where broadband is available and where it is not"[5] and decline some

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Comments of Ill. Dept. of Innovation & Technology, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Illinois Comments"); Comments of NCTA, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("NCTA Comments"); Comments of Next Century Cities et al., WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Next Century Cities Comments"); Comments of NTCA, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("NTCA Comments"); Comments of The City of New York, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("NYC Comments"); Comments of U.S. Cellular Corporation, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("US Cellular Comments"); Joint Comments of USTelecom, ITTA, and The Wireless Internet Service Providers Association, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("USTelecom, ITTA, & WISPA Comments"); Comments of Verizon, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("Verizon Comments"); Comments of WTA, WC Docket Nos. 19-195, 11-10 (Sept. 23, 2019) ("WTA Comments").

[3] *Second FNPRM* ¶¶ 112, 123.

[4] *See* Broadband Deployment Accuracy and Technological Availability (DATA) Act, S. 1822, 116th Cong. (2019) ("S. 1822"), which was approved by voice vote by the U.S. Senate Committee on Commerce, Science, and Transportation; *see also* Broadband Deployment Accuracy and Technological Availability Act, H.R. 4229, 116th Cong. (2019) ("H.R. 4229").

[5] *Second FNPRM* ¶ 1.

commenters' suggestions that the DODC should be an omnibus collection of data, such as pricing, usage, and latency. Collecting this information would not only be onerous but would also be unrelated to the DODC's goal of collecting and displaying accurate broadband deployment data. To the extent these issues are relevant to the Commission's general public policy goals, the Commission already evaluates them in the *Communications Marketplace Report*, and there is no need to duplicate those efforts through the DODC.

II. THE RECORD CONFIRMS THAT STANDARDIZED 4G LTE SERVICE-LEVEL REQUIREMENTS WILL ENHANCE THE COMMISSION'S ABILITY TO IDENTIFY THE AREAS WITH ACCESS TO MOBILE WIRELESS BROADBAND.

In the *Second FNPRM*, the Commission sought comment on the appropriate parameters for mobile wireless coverage data.[6] At the same time, the Commission acknowledged the difficulties in creating maps that reflect consumers' real-time, on-the-ground experiences, noting that "measuring performance on mobile broadband networks is inherently variable even though coverage is generally reliable."[7] Commenters echoed the Commission's view. As Verizon explained, "determining the area that a particular broadband provider services 'is highly idiosyncratic and determined by multiple factors.'"[8]

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[6] *Second FNPRM* ¶¶ 112-117.

[7] *Second FNPRM* ¶ 112.

[8] Verizon Comments at 2 (quoting *Second FNPRM* ¶ 79); *see also* CCA Comments at 4 (recognizing that "no model will perfectly reflect on-the-ground coverage"). Given that, even as "providers continually refine models by adding additional data, the inherent variability of mobile broadband performance will always affect their ability to predict an individual consumer's experience," *Second FNPRM* ¶ 117, it would be unreasonable for the Commission to hold providers strictly liable for any errors in mobile wireless coverage maps. *See id.* ¶ 83 (seeking comment on potential penalties for the submission of inaccurate data). Instead, if the Commission adopts an enforcement regime with respect to coverage map accuracy, it should take into account "the probabilistic nature of mobile wireless service," *id.* ¶ 123.

Even with the complexities and probabilistic nature of mobile wireless broadband and the unique characteristics of each mobile wireless provider's network design and operations, the record supports adopting standardized service-level parameters for estimating 4G LTE coverage, which will enable the Commission to aggregate and compare coverage maps among wireless providers. Specifically, the Commission should require mobile wireless providers to submit coverage maps of 4G LTE services that reflect a 90 percent probability of download speeds of 5 Mbps and upload speeds of 1 Mbps at the cell edge with a 50 percent cell loading factor.

These service-level parameters are a product of Senator Wicker's leadership and bipartisan, bicameral congressional consensus[9]—and for good reason. As US Cellular noted, these are the cell edge probabilities and cell loading factors that carriers themselves use when building their own networks, and so will more accurately reflect coverage.[10] Verizon similarly explained that these parameters are "more robust" and "should make it less likely that actual user experience falls short of that predicted by the model."[11] CCA, too, concurred that a 90 percent cell edge probability and 50 percent cell loading factor "will prevent against an overstatement of network coverage and help to ensure certain rural communities are provided adequate mobile broadband service."[12] US Cellular also explained that, because the resulting maps will be more conservative, there should be fewer areas of controversy, making any validation process more manageable.[13]

[9] *See* S. 1822; H.R. 4229.

[10] US Cellular Comments at 14.

[11] Verizon Comments at 9.

[12] CCA Comments at 6.

[13] *See* US Cellular Comments at 14.

The Commission should focus on these service-level standards and decline to adopt additional technical parameters, as a few commenters suggest.[14] The Commission has found that highly prescriptive technical requirements are unnecessary and, given the variations in the design and construction of mobile wireless broadband networks, are likely to cause misstatements in coverage.[15] Commenters supports these findings.[16] Adopting service-level standards for mobile providers will provide consistent coverage data while giving providers the flexibility to account for the unique characteristics of their individual networks and spectrum.

III. THE RECORD CONFIRMS THE VALUE OF A PILOT PROGRAM TO EVALUATE THE UTILITY OF ADDITIONAL DATA SOURCES TO VALIDATE DATA SUBMITTED BY WIRELESS PROVIDERS.

In the *Second FNPRM*, the Commission sought comment on using a wide array of tools, including crowdsourcing and drones, to validate coverage data submitted by mobile wireless providers. The diversity of these tools—as well as their uncertain utility and lack of consensus about how best to use and reconcile them—confirms the value of conducting a targeted pilot to

[14] *See, e.g.*, Deere Comments at 9-10 (proposing a specific signal strength parameter of -85 dBm); *see* NYC Comments at 2 (supporting the inclusion of "any and all" technical parameters).

[15] *See, e.g.*, *In re Connect America Fund*, Order on Reconsideration and Second Report and Order, 32 FCC Rcd 6282, 6303 ¶ 40 & n.110 ("Our analysis comparing results of theoretical propagation models and actual speed test data from Ookla indicates that the signal strength parameter in propagation models may not be closely correlated with actual on-the-ground data in a particular geographic area.").

[16] *See* Verizon Comments at 9-10; Letter from Mary L. Henze, Assistant Vice President, AT&T, to Marlene Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90 at 1 (July 27, 2017) (noting that "signal strength will vary based on carrier-specific differences such as network design, spectrum band, spectrum capacity, and type of equipment" whereas "[a] cell edge throughput benchmark . . . provides each carrier a common standard that is divorced from network variances" and urging the Commission not to adopt other technical parameters because "such proposals will only complicate the process and constrain the coverage area").

assess both the benefits of the tools as well as the broader process to reconcile potentially conflicting data.[17]

Commenters raised a variety of concerns about the utility of certain tools, particularly crowdsourcing,[18] to validate providers' coverage maps. Verizon, for example, noted crowdsourcing's capacity to "introduce noise and complexity," and so urged the Commission to "approach crowdsourced data cautiously."[19] Several commenters recommended that the Commission treat crowdsourcing as a tool to identify broader "trends" rather than as a channel to unleash a flood of unique claims.[20] Commenters also urged the Commission to restrict crowdsourcing to bulk submissions,[21] and to define the evidentiary standards that such submissions should have to meet,[22] which could help the Commission focus on any trends that emerge, reduce burdens on providers, and ensure that the crowdsourced submissions are reliable.

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[17] CTIA Comments at 8-11.

[18] *See, e.g.*, GVNW Comments at 5 (calling the public's ability to dispute broadband coverage a "double-edged sword" given its potential for inaccurate or bad-faith disputes); NYC Comments at 4 ("discourage[ing] overreliance on verification via crowdsourcing alone").

[19] Verizon Comments at 5.

[20] *See* Verizon Comments at 6 ("Crowdsourcing that focuses on identifying trends and trouble-spotting, rather than addressing every unique claim, can be useful and avoid the burdens on providers and USAC of the inevitable clutter"); NTCA Comments at 11 ("Rather than treating [crowdsourced data] as 'one-off' consumer complaints . . . NTCA proposes that the Commission use this data to identify trends"); US Cellular Comments at 4 (identifying outliers); Connected2Fiber Comments at 5 (triggering outside audit); WTA Comments at 10 ("informational purposes only").

[21] Illinois Comments at 7-8 (arguing that "a bulk filing tool by governmental entities that lack any competitive, commercial, or malicious motive will sharply limit any risk of abuse"); Next Century Cities Comments at 6 (arguing that local governments, tribal authorities, and states should be allowed to submit bulk data because "[t]hese entities have strong incentives to ensure the maps are correct . . . and they often receive complaints . . . giving them unique insight into accuracy").

[22] NCTA Comments at 14 (noting that even bulk submissions filed in good faith may "fall well short" of the evidentiary standards needed to legitimately challenge a coverage map).

The record also supports the need for further analysis before incorporating drone data into the DODC. A pilot program could help test the utility of drone data and assist the Commission in assessing cost elements related to drone testing.[23] Particularly in light of USAC's recent findings regarding the costs of testing drones,[24] additional testing via a pilot is critical to avoid imposing unnecessary burdens.

In terms of reconciling data, commenters noted the variety of ways the Commission could resolve conflicts between provider-submitted coverage maps and other data tools. For example, a few commenters encouraged the Commission to make changes to address concerns regarding the Mobility Fund Phase II ("MF-II") challenge process.[25] With regard to crowdsourced data, Verizon and other commenters urged the Commission not to treat each crowdsourced dispute as a challenge, noting that requiring providers to respond to each individual crowdsourced submission would be unnecessarily burdensome and "will not materially improve the development of accurate coverage maps."[26] A pilot would enable the Commission to evaluate both the data inputs and the

[23] *See, e.g.*, US Cellular Comments at 5 (suggesting that the Commission could create a pilot program to test the accuracy and reliability of the data collected by drones).

[24] CTIA Comments at 9-10 (citing Letter from Victor Gaither, Vice President, Universal Service Administrative Company, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 11-10, Attachment Verification of Mobile Wireless Service in Puerto Rico Post Hurricane Maria, at 3 (July 9, 2019)).

[25] *See, e.g.*, CCA Comments at 8-10 (describing the Mobility Fund Phase II Challenge Process as "overly burdensome and insufficient to correct flaws, particularly for small providers"); US Cellular Comments at 14-15 (arguing that, because the MF-II coverage maps overstated coverage, "the areas of controversy were so large that it made the Commission's challenge process very difficult"). In terms of a formal challenge process, NCTA proposed a two-tiered approach where the Commission would oversee "a formal evidence-based challenge process that would take place before awarding [universal service] funding . . . and an informal process for data gathering that would be available at any time." NCTA Comments at 12-17. Separating the challenge process for universal service funding from the general reconciliation process for DODC has merit and CTIA urges the Commission to evaluate the best way to do so.

[26] Verizon Comments at 7; *see also* NTCA Comments at 11 (noting that "requiring providers to respond to individual speed tests . . . would be highly burdensome for providers and the

reconciliation process, allowing the agency to determine how to conduct a validation process in a manner that addresses the concerns raised about the MF-II challenge process.

Finally, the record also supports CTIA's suggestion to defer the collection of detailed, sensitive infrastructure information until after conducting the proposed pilot of other validation tools.[27] The Commission recognized that infrastructure information is "commercially sensitive information" and "agree[d] that such information should be treated as highly confidential."[28] But, as Verizon explained, even if the Commission (appropriately) treats the information as "highly confidential," "the risk of inadvertent disclosure of a complete database of a carrier's network infrastructure raises significant network security concerns."[29] AT&T similarly noted that the infrastructure collection "raises obvious concerns" with respect to revealing information that is not only competitively sensitive but that could also impact national security.[30]

In addition to confidentiality concerns, the record highlights the potential burdens

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Commission itself, could overwhelm USAC quickly, and would likely provide little useful data in terms of mapping adjustments."); Connected Nation Comments at 7 ("unreasonable and impractical" for providers to respond to every crowdsourced submission); Alaska Communications Comments at 14 ("the service provider should not be required to respond individually within a set period to each dispute received with USAC"). According to Verizon and others, requiring an individual response to each crowdsourced dispute would be tantamount to "develop[ing] a surrogate process for public feedback that duplicates the existing informal complaint process." Verizon Comments at 5-6; *see also* USTelecom, ITTA, & WISPA Comments at 27 (noting that crowdsourcing process should not drift into a "complaint" process); Alaska Communications Comments at 14 (warning that requiring individualized responses to every crowdsourced submission "would duplicate or supplant the established customer service processes that broadband service providers already have in place"); Alexicon Comments at 5-6 (providers should be alerted only "once a statistically significant number of 'challenges' about a specific provider's area has been received and subjected to an initial review").

[27] CTIA Comments at 13-14.

[28] *Second FNPRM* ¶ 120.

[29] Verizon Comments at 11.

[30] AT&T Comments at 8-9.

associated with submitting infrastructure information. Mobile providers do not keep the infrastructure information in a format that would be readily available to submit to the Commission. As AT&T explained, "national security and competitive sensitivity concerns . . . dictate that precise infrastructure locations not be kept in readily accessible locations and formats."[31] Providing the detailed information that the Commission requests—"particularly [for] larger providers with thousands of sites"—could be highly onerous.[32] US Cellular similarly recognized that producing the information could take significant time.[33]

While CTIA understands that the Commission may find that infrastructure information may be helpful in certain circumstances,[34] CTIA urges the Commission to first evaluate other tools that involve less burdensome and less sensitive collections.

IV. THE COMMISSION SHOULD FOCUS ON IMPROVING INFORMATION ABOUT BROADBAND AVAILABILITY AND AVOID EXPANDING THE DODC INTO AN OMNIBUS DATA COLLECTION.

The *Report and Order* explained that the DODC will "gather geospatial broadband service availability data specifically targeted toward advancing our universal service goals."[35] The Commission should retain the DODC's focus on broadband availability to determine "where broadband is available and where it is not."[36] Requests to expand the DODC into an omnibus,

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[31] AT&T Comments at 9.

[32] AT&T Comments at 9; *see also* Verizon Comments at 11 (describing the infrastructure collection as one of "the more complex and burdensome approaches discussed in the *FNPRM*").

[33] *See* US Cellular Comments at 16 (proposing an alternative framework for the collection of infrastructure information but requesting, "at a minimum, [that] the Commission should provide carriers with a 60-day deadline"); AT&T Comments at 9 (suggesting that, given the burden, providers "be allowed the flexibility to request additional time to respond").

[34] *See, e.g.,* US Cellular Comments at 15 (noting the potential utility of infrastructure information to verify coverage maps).

[35] *Second FNPRM* ¶ 2.

[36] *Second FNPRM* ¶ 1.

burdensome new collection of information that does not relate to broadband availability should be rejected.

First, pricing and usage are not directly relevant to whether mobile broadband service is available. As the Commission has recognized, "while factors such as data allowances or pricing may affect consumers' use of advanced telecommunications capabilities . . . such considerations do not affect the underlying determination of whether advanced telecommunications capability has been deployed and made available to customers in a given area."[37]

Pricing and data usage limits are transparent and available on mobile providers' websites. Mobile pricing is varied and dynamic,[38] reflective of the vigorous competition in the market.[39] Forcing mobile providers to collect a snapshot of every pricing plan would impose a burden with little-to-no benefit. Moreover, the Commission already requires mobile providers to disclose their network management practices, including throttling.[40] Adding burdensome, nationwide pricing and usage data collections would thus be "duplicative and unnecessarily burdensome."[41] Indeed,

[37] *See In re Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2019 Broadband Deployment Report, 34 FCC Rcd 3857, 3865-66 ¶ 19 (2019) ("*2019 Report*") (quoting *In re Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2018 Broadband Deployment Report, 33 FCC Rcd 1660, 1675 ¶ 39 (2018) ("*2018 Report*")).

[38] Comments of CTIA, at 17, WC Docket Nos. 11-10, 07-38, 08-190, 10-132 (Mar. 30, 2011) ("Wireless providers are constantly innovating, including in their pricing, and new plans and discounts are announced frequently") ("2011 CTIA Comments").

[39] 2011 CTIA Comments at 17.

[40] *Restoring Internet Freedom*, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd 311, 439-442 ¶¶ 219-223 (2018), *vacated by sub nom. Mozilla Corp. v. FCC*, No. 18-1051, __ F.3d __, 2019 WL 4777860 (D.C. Cir. Oct. 1, 2019).

[41] 2011 CTIA Comments at 19.

the Commission already considers these issues elsewhere: the *Communications Marketplace Report* analyzes mobile pricing and data usage.[42]

The Commission should also decline to adopt requests to require mobile providers to report latency. Similar to pricing and usage, the Commission has found that latency is not a fundamental measure of broadband availability.[43] In addition, the Commission has also recognized that latency information is already widely available from a variety of sources.[44] Collecting this information from mobile providers is thus unnecessary to achieve the Commission's goals in the DODC and would impose a duplicative burden.[45]

V. CONCLUSION.

As mobile wireless coverage data is essential to the Commission's public policy initiatives, the record reflects widespread support for updating the collection of mobile broadband coverage

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[42] *See, e.g.*, *In re Communications Marketplace Report*, Report, 33 FCC Rcd 12,558, 12,568-70 ¶¶ 12-13 (discussing data usage), 12,570-12,576 ¶¶ 14-22 (2018) (discussing pricing levels and trends).

[43] *See 2019 Report*, 34 FCC Rcd at 3865-66 ¶ 19 (Applying a latency benchmark "would exclude from our section 706 analysis any consideration of broadband services that, on their face, would appear to provide consumers with the relevant capabilities articulated in section 706(d)(1), would prevent a reliable or complete assessment of the deployment of advanced telecommunications capability" (quoting *2018 Report*, 33 FCC Rcd at 1675 ¶ 39)); *see also* USTelecom, ITTA, & WISPA Comments at 22-24; Geolinks Comments at 6 (noting "latency is not a measure of broadband 'deployment'"); Connected2Fiber Comments at 3-4 (noting that latency "does not sit at the heart of the FCC's objective to create complete coverage of broadband services").

[44] *See In re Communications Marketplace Report*, 33 FCC Rcd at 12,687 ¶ 246 n.785 (noting that Ookla's Speedtest mobile app includes test results for latency); *see also, e.g., USA Mobile Network Experience Report*, Open Signal (Jan. 2019), https://www.opensignal.com/reports/2019/01/usa/mobile-network-experience (comparing latency across carriers).

[45] Alaska Communications Comments at 8-10 (reporting latency "would be burdensome, broadly unnecessary, and unjustifiable"); *see also* CTIA March 2011 Comments at 21 ("[s]ervice quality and customer satisfaction data is readily available from commercial sources, and there would be no benefit to collecting data on more granular metrics like . . . latency"); *see also id.* at 22-23 (arguing that there is "[n]o reason" to collect "specific network metrics such as packet loss, latency, jitter, or network outages," and that "the competitive marketplace provides the best assurance of network performance").

data by building upon bipartisan congressional efforts to require mobile wireless providers to submit coverage maps that meet standardized service-level requirements for 4G LTE. In light of concerns and divergent views in the record regarding the tools to verify provider-submitted data, the Commission should conduct a pilot to pressure-test both the validation tools and the proposed reconciliation process. Evaluating real-world evidence will avoid creating unnecessary burdens, while ensuring that the DODC succeeds in transforming our understanding of broadband availability with coverage maps that enable the Commission to identify and close the digital divide.

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